REMARKS

Claims 28-50 are pending.

The Examiner has rejected claims 28-50 under 35 U.S.C.§ 102(e) over Stapel (6,912,538). Applicant respectfully traverses this rejection.

Applicant's technology is directed to generating a <u>new representation</u> of a document from a <u>current representation</u> that is based on a hierarchical model. Hierarchical models, such as XML, represent hierarchical relationships explicitly, such as by nesting of elements. A difficulty with such hierarchical models is that there is no support for explicitly representing non-hierarchical relationships between elements. As a result, creators of documents represented with a hierarchical model use various mechanisms, other than that used to represent hierarchical relationships, to represent non-hierarchical relationships. Since the creators may use different mechanisms, it can be difficult to identify these implicit, non-hierarchical relationships automatically. As a result, different techniques need to be developed for each different mechanism used to represent a non-hierarchical relationship.

Applicant's new representation has items corresponding to elements of the document and links between items that correspond to hierarchical and non-hierarchical relationships of the document. Thus, in the new representation, both hierarchical and non-hierarchical relationships are explicitly represented using the same mechanism. Each of the claims recites the generating of this <u>new representation</u> from a <u>current representation</u> of the document that is based on a hierarchical model.

Stapel, which the Examiner relies upon in rejecting the claims, describes an editing method for defining document schemas that are used to validate and generate structured documents. A user first provides an input schema in the form of an XML Document Type Definition (DTD) that defines a permitted set of relationships between document elements. For example, the DTD may define that an element of type A can have child elements of

type B or C, but not any other types. Stapel, col. 5:39-41, 8:52-57. Stapel converts the DTD schema into a set of tables, called a matrix representation, which is algorithmically easier to use for validating documents than the original DTD. Stapel, col. 6:66-7:12.

Stapel mentions "non-hierarchical" data only twice, and does so only to suggest that the input DTD can contain flat information (such as a list of top-level elements with no child elements), rather than tree-structured information with many levels. Stapel, col. 6:30-32. Stapel neither teaches nor suggests that hierarchical and non-hierarchical relationships can be represented by the same mechanism. Rather, Stapel's hierarchical relationships are represented by the XML nesting of elements, and Stapel's non-hierarchical relationships are represented by a flat listing of elements, which are different mechanisms. Moreover, Stapel preserves the hierarchical and non-hierarchical relationships when a DTD is loaded into the matrix representation, "the matrix representation methods described herein preserve the structural characteristics of the DTD...the matrix transformation processes may preserve the underlying hierarchical order...non-hierarchical orderings of the input DTD...are likewise preserved." Stapel, col. 20:61-21:2.

In contrast, Applicant's technology discovers both hierarchical and non-hierarchical relationships in an XML document and converts them to a new representation that explicitly represents both types of relationships using the same mechanism. Because Stapel does not teach, suggest, or motivate the use of the same mechanism to represent both hierarchical and non-hierarchical relationships, claims 28-50 are patentable over Stapel. Each of these claims recite that the same mechanism, a link between items, is used to represent both hierarchical and non-hierarchical relationships. Moreover, there is nothing in Stapel to suggest the combination of elements that is recited by each claim.

Based upon these remarks and amendments, Applicant respectfully requests reconsideration of this application and its early allowance. If the Examiner has any questions or believes a telephone conference would expedite prosecution of this application, the Examiner is encouraged to call the undersigned at (206) 359-8548.

Applicant believes all required fees are being paid in connection with this response. However, if an additional fee is due, please charge our Deposit Account No. 50-0665, under Order No. 418268851US from which the undersigned is authorized to draw.

Dated: 3-14-06

Respectfully submitted,

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